

IN THE SPECIFICATION:

Please replace paragraph 0040 with the following paragraph:

The ~~converter~~converting unit 110 converts the voltage (V_SOURCE) of a power source (not shown) into a constant voltage (V_CONST). A converter enable signal (CONVERT_EN) controls the application of the constant voltage to the backlight illumination unit 120. Preferably, the converting unit ~~converter~~-110 is a charge-pump or a DC-DC converter.

Please replace paragraph 0041 with the following paragraph:

In order to provide a constant voltage level, the converting unit ~~converter~~-110 operates as a down-converter when the voltage (V_SOURCE) of the power source is equal to or above a predetermined value and operates as an up-converter when the voltage of the power source is below the predetermined value. In this manner, the converting unit ~~converter~~-110 outputs a constant voltage (V_CONST) regardless of the change in the voltage level (V_SOURCE) of the power source. Preferably, the predetermined value is a voltage level at which the backlight illumination unit 120 fully illuminates a display (not shown), for example approximately 4 Volts DC.

Please replace paragraph 0044 with the following paragraph:

The controller 124 measures the output voltage of the power source (V_SOURCE) and compares the measured voltage to a predetermined value. If the power source output (V_SOURCE) is at or above the predetermined value, the controller 124 generates the bypass enable signal (BYPASS_EN) to activate the switching unit 122. If the power source output is below the predetermined value, the controller 124 generates the converter enable signal (CONVERT_EN) to activate the converting ~~converter~~-unit 110.

Please replace paragraph 0045 with the following paragraph:

The bypass enable (BYPASS_EN) and converter enable (CONVERT_EN) signals are logically ORed 135 to control the backlight power switch 130. In this way,

when either the power source voltage (V_SOURCE) or the up-converted constant voltage level (V_CONST) from the ~~converting converter~~-unit 110 is applied to the backlight illumination unit 120, the LEDs (LED1, LED2, LED3) are illuminated. The controller 124 may also generate a backlight enable signal separate from the bypass enable signal (BYPASS_EN) and the converter enable signal (CONVERT_EN) with the backlight enable signal controlling the backlight power switch 130 independent of the on/off state of the ~~converting converter~~-unit 110 and switching unit 122.

Please replace paragraph 0046 with the following paragraph:

A scaling function 137 such as first and second voltage-dividing resistors R10 and R20 may be provided to divide the power source voltage (V_SOURCE), preferably in half. If the power source voltage is scaled, the predetermined value to which the divided voltage is compared is also scaled. For example, if it is desired to bypass the ~~converting converter~~-unit 110 if the power source voltage (V_SOURCE) is equal to or greater than approximately 4 Volts DC, the halved voltage would be compared to a predetermined value of approximately 2 Volts DC.

Please replace paragraph 0051 with the following paragraph:

If the measured voltage level is equal to or greater than the predetermined value, the controller 124 disables the converter enable signal (CONVERT_EN) in step S13 and generates the bypass enable signal (BYPASS_EN) in step S14 to remove power from the ~~converting converter~~-unit 110 and enable the switching unit 122. In this manner, when the output of the power source (V_SOURCE) is equal to or greater than the predetermined value, the converting unit 110 draws no power and the output of the power source is applied directly to the backlight illumination unit 120, thereby reducing power consumption of the power source.

Please replace paragraph 0052 with the following paragraph:

If the measured voltage level is smaller than the predetermined value, the controller 124 disables the bypass enable signal (BYPASS_EN) in step S16 and generates the converter enable signal (CONVERT_EN) in step S18 to disable the

switching unit 122 and turn on the converting converter-unit 110. In this manner, when the output of the power source (V_SOURCE) is smaller than the predetermined value, the converting unit 110 up-converts the output (V_SOURCE) of the power source and a constant voltage level (V_CONST) is applied to the backlight illumination unit 120, thereby preventing the dimming of the LEDs as the power source is drained.

Please replace paragraph 0053 with the following paragraph:

Referring to FIG. 4, the high (H) and low (L) states of the control signals generated by the controller 124 according to the level of the power source voltage (V_SOURCE) are illustrated. The backlight illumination unit 120 is powered unless both the bypass enable (BYPASS_EN) and converter enable (CONVERT_EN) signals are low. The converting converter-unit 110 is powered if the converter enable (CONVERT_EN) signal is high and the switching unit 122 is enabled if the bypass enable (BYPASS_EN) signal is high.

Please replace paragraph 0054 with the following paragraph:

The apparatus and method of the present invention has several advantages. Because the output of the power source is applied directly to the backlight illumination unit when the voltage level is high enough to properly illuminate the LEDs, unnecessary power consumption by the converting unit ~~converter~~ is avoided and power consumption of the backlight control unit can be reduced, thereby increasing use time before power source recharging is required. Because the output of the power source is up-converted to a constant voltage level by a converter when the voltage level is not high enough to properly illuminate the LEDs, no dimming of the backlight illumination unit occurs as the power source discharges.